AUTHOR INDEX

Canadian Journal of Soil Science, Volume 64, 1984

Acton, C. J., 383
Acton, D. F., 163
Al-Kanani, T., 99, 107
Arp, P. A., 423, 457

Barnett, G. M., 75, 369
Bailey, W. G., 313
Beauchamp, E. C., 555
Beke, G. J., 195
Berg, N. W., 209
Biederbeck, V. O., 323, 355
Bole, J. B., 301
Bowren, K. E., 345
Brklacich, M., 467
Broughton, R. S., 273
Burton, D. L., 555

Cacco, G., 225
Campbell, C. A., 61, 125, 333, 355, 705
Carter, M. R., 563
Chaney, J. G., 445
Chase, F. E., 9
Chisholm, P. S., 383
Cline, R. A., 87
Cressman, D. R., 463
Culley, J. L. B., 75
Curtin, D., 545
Cutcliffe, J. A., 571

Daigle, J. L., 229
Davis, J. L., 313
De Jong, R., 61, 667
De Kimpe, C. R., 577
Dell'Agnola, G., 225
Dormaar, J. F., 647
Dube, A., 369
Dudas, M. J., 395, 515
Dumanski, J., 463, 467
Durgin, P. B., 439, 445

Elegba, M. S., 621, 631

Fox, C. A., 495

Gaynor, J. D., 283
Ghebre-Egziabhier, K., 481
Giroux, M., 369
Goh, T. B., 411
Goodroad, L. L., 187
Grant, C. A., 293
Gupta, U. C., 403, 571

Heimo, M., 1
Henry, J. L., 699
Hogg, T. J., 699
Huang, P. M., 411, 545
Hulstein, W., 265

Irwin, R. W., 383

Jame, Y. W., 323, 333
James, B. R., 637
Jeanroy, E., 505

Karamanos, R. E., 345
Keeney, D. R., 187
Korven, H. C., 323
Kowalenko, C. G., 115, 147
Krause, H. H., 423

Lasalle, P., 577
Laverdière, M. R., 577

MacDonald, K. B., 467
MacKenzie, A. F., 51, 99, 107
MacLeod, J. A., 403
Martini, I. P., 31
McAndrew, D. W., 125
McKeague, J. A., 173, 195, 657
McKenzie, R. C., 681
Melin, J., 21
Mermut, A. R., 163, 481
Michalyna, W., 587, 605
Miller, M. H., 467
Millette, J. A., 273

Nicholaichuk, W., 323
Nômmik, H., 21
Nyborg, M., 681

Pawluk, S., 209, 515
Pittman, U. J., 301
Pluth, D. J., 21
Protz, R., 31
Puig-Gimenez, M. H., 9

Racz, G. J., 241, 255, 293
Read, D. W. L., 125
Rees, H. W., 229
Rennie, D. A., 1, 563
Rennie, R. J., 621, 631
Riha, S. J., 637

Ross, G. J., 31, 87, 99, 107
Rostad, H. P. W., 545
Rust, R. H., 587, 605

Sadler, J. M., 533
Schaalje, G. B., 265
Schuppli, P. A., 173, 657
Selles, F., 345
Shah Singh, S., 153
Sheppard, S. C., 241, 255
Shields, J. A., 667
Sly, W. K., 667
Smit, B., 467
Sommerfeldt, T. G., 139, 265
Spiers, G. A., 515
St. Arnaud, R. J., 481
Stobbe, E. H., 293

Terasmae, J., 31
Tomar, J. S., 51
Topp, G. C., 313

Valeriano Madeira, M. A., 505
Vogelsang, P. J., 439

Wang, C., 229
Winkleman, G. E., 125, 333
Wires, K. C., 297

Zebchuk, W. D., 313
Zentner, R. P., 61, 355, 705

SUBJECT INDEX
Canadian Journal of Soil Science, Volume 64, 1984

Acarina
  soil mesofauna studies under different vegetative regimes, 209
Acetylene blockage
  field measurement of denitrification, 555
Acid-hydrolyzable fraction
  effect of tillage practices on ^{15}N abundance, 345
Acid precipitation
  aluminum in forest soil organic horizons, 637
Acid soils
  cation exchange capacity as affected by $CaSO_4$, 153
Aggregate fractions
  monosaccharides in water-stable aggregates, 647
Alfalfa yield
  salinity and crop yield under effluent irrigation, 323
Allophane
  authigenesis and solodization, 515
Aluminum (extractable)
  soil acidity, properties and lime requirements, 545
Aluminum toxicity
  influence of subsoil acidity on crop growth, 681
Analyse du phosphore
  fertilisation P de la pomme de terre, 369
Analysis methods
  effect of heat on soil As levels, 395
Animal waste
  land disposal of manure in Quebec, 75
Arrhenius relationship
  quantifying net nitrogen mineralization, 333
Arsenic analysis
  effect of heat on soil As levels, 395
Arsenic form
  effect of heat on soil As levels, 395
Arsenic geochemistry
  effect of heat on soil As levels, 395
Authigenic
  authigenesis and solodization, 515
Availability of K to grapes
  soil potassium and its uptake by grapes, 87

Bacteria (N_2 fixing)
  Agrispon and plant growth, 621
Barley
  Agrispon and plant growth, 621
  availability of subsoil sulphates, 301
  influence of subsoil acidity on crop growth, 681
  N-cycle changes due to temperature regimes and trash, 1
Beans
  Agrispon and plant growth, 621
  effect of boron on cabbage and beans, 571
Bicarbonate-P
  phosphorus under crop rotations, 125
Boron toxicity
  effect of boron on cabbage and beans, 571

Cabbage
  effect of boron on cabbage and beans, 571
Calcium sulphate
  cation exchange capacity as affected by $CaSO_4$, 153
Capability
  costs of underground service installations, 463
Capillary gas chromatography
  monosaccharides in water-stable aggregates, 647
Carbon dating
  age of Holocene soils, 163
  podzolic soil formation near Hudson Bay, 31
Carbon dioxide evolution
  decomposition of wheat straw, 9
Carbon (extractable)
  limitations of Ch/Cf ratios, 173
Carbonate
  dispersion of kaolinite by ash, 439
  soil temperature and phosphorus extractability, 255
Carboxylic acid
  dispersion of kaolinite by organic matter, 445
Casagrande
  liquid limit determination, 297
Cation exchange
  cation exchange capacity as affected by $CaSO_4$, 153
  pH effects on cation exchange properties of soil, 139
  soil acidity, properties and lime requirement, 545
Cereals
  sulfur nutrition of crops, 403
Characterization
  morphometric system for describing organic soils, 495
Chemical composition of smectites
  the nature of smectites, 481

Chemical criteria
classification of clayey Chernozemic and Gleysolic soils, 605
classification of Podzolic soils, 229
classification of sandy chernozemic and gleysolic soils, 587
Chemical fertilizer
decomposition of wheat straw, 9
Classification
tree-throw soils from Nova Scotia, 195
Classification criteria
limitations of Ch/Cf ratios, 173
Clinoptilolite
authigenesis and solodization, 515
Collembola
soil mesofauna studies under different vegetative regimes, 209
Contamination
washing filbert leaves for nutrient analyses, 147
Conventional tillage
effect of tillage practices on ^{15}N abundance, 345
Corn
Agrispon and plant growth, 621
Crop residues
N-cycle changes due to temperature regimes and trash, 1
Crop rotations
nitrate leaching and crop rotations, 61

Dehydration of smectites
nature of smectites, 481
Denitrification
dissimilatory nitrate reduction in NO and N_2O atmospheres, 21
field measurement of denitrification, 555
nitrous oxide emissions from soils during thawing, 187
Descriptive method
morphometric system for describing organic soils, 495
Desorption
soil temperature and phosphrous extractability, 241
Development costs
costs of underground service installations, 463
Diclofop degradation
diclofop-methyl persistence in soils, 283
Drainage characteristics
soil drainage groups, 383
Drop-cone penetrometer
liquid limit determination, 297

Energy of activation
urease inhibition and energy barriers of soil urease activity, 51
Energy of K exchange
soil potassium and its uptake by grapes, 87
Ethanol
goethite peptisee par pyrophosphate et tetraborate, 505
Exchangeable-Al-associated organic carbon
citric acid peturbation of Al interlaying, 411

Factor analysis
forest floor variability, 457
Ferro-Humic-Podzol
lateral forest floor variability, 423
Fertilization phosphatee
fertilisation P de la pomme de terre, 369
Fertilizer
soil temperature and phosphorus extractability, 241
Fertilizer and leaching
nitrate leaching and crop rotations, 61
Field measurement techniques
field measurement of denitrification, 555
Field test
field test for Podzolic B horizons, 657
Filberts
nutrient requirements of filberts, 115
washing filbert leaves for nutrient analyses, 147
Fire
dispersion of kaolinite by ash, 439
Fixation of K
soil potassium and its uptake by grapes, 87
Floculation
goethite peptisee par pyrophosphate et tetraborate, 505
Fluoride
aluminum in forest soil organic horizons, 637
Forages
sulfur nutrition of crops, 403
Forest floor
forest floor variability, 457
lateral forest floor variability, 423
Formes du fer
goethite peptisee par pyrophosphate et tetraborate, 505
Fractionation
dispersion of kaolinite by organic matter, 445
Frozen soils
nitrous oxide emissions from soils during thawing, 187
Fulvic acid
aluminum in forest soil organic horizons, 637

dispersion of kaolinite by organic matter, 445
Fulvic acid carbon
limitations of Ch/Cf ratios, 173

Generalized soil areas
soil water reserves in Saskatchewan, 667
Glacial diamicton
sub-till saprolite in southern Quebec, 577
Groundwater gleysols
soil drainage groups, 383

Hoegrass
diclofop-methyl persistence in soils, 283
Holocene soils
age of Holocene soils, 163
Humic acid carbon
limitations of Ch/Cf ratios, 173
Hydraulic conductivity
tempe cells for soil-water studies, 265
Hydrologic soil groups
soil drainage groups, 383
Hydroxy-Al interlayers
citric acid peturbation of Al interlaying, 411

Incubation
soil temperature and phosphorus extractability, 241
Integral land evaluation, 467
Intensive cropping
topsoil loss effect on crop production potential of soil, 533
Iron montmorillonite
nature of smectites, 481

Kaolinite
sub-till saprolite in southern Quebec, 577

Land preservation
costs of underground service installations, 463
Land use
tree-throw soils from Nova Scotia, 195
Land use flexibility
integral land evaluation, 467
Land use policy
integral land evaluation, 467
Lateral variability
forest floor variability, 457
lateral forest floor variability, 423
Leaching (bimodal)
nitrate leaching and crop rotations, 61
Leaching (carbonate)
Podzolic soil formation near Hudson Bay, 31
Leaf washing
washing filbert leaves for nutrient analyses, 147
Leaf weights
nutrient requirements of filberts, 115
Liming
influence of subsoil acidity on crop growth, 681
Liquid limit determination, 297
Luvisol
topsoil loss effect on crop production potential of soil, 533

Macronutrients
nutrient requirements of filberts, 115
washing filbert leaves for nutrient analyses, 147
Manure applications
land disposal of manure in Quebec, 75
Mapping
tree-throw soils from Nova Scotia, 195
Microbial activity
soil biological changes in crop rotations, 355
Microbial biomass
soil biological changes in crop rotations, 355
Micromorphology
morphometric system for describing organic soils, 495
Micronutrients
nutrient requirements of filberts, 115
washing filbert leaves for nutrient analyses, 147
Mineralizable nitrogen
topsoil loss effect on crop production potential of soil, 533
Moisture
decomposition of wheat straw, 9
Moisture effects
phosphorus under crop rotations, 125
Monosaccharides
monosaccharides in water-stable aggregates, 647
Morphological criteria
classification of clayey Chernozemic and Gleysolic soils, 605
classification of Podzolic soils, 229
classification of sandy Chernozemic and Gleysolic soils, 587
Muscovite
sub-till saprolite in southern Quebec, 577

^{15}N-urea
crop utilization of ^{15}N-urea under zero tillage, 563

Nitrate movement
nitrate leaching and crop rotations, 61
Nitrate reduction (dissimilatory)
dissimilatory nitrate reduction in NO and N_2O atmospheres, 21
Nitric oxide
dissimilatory nitrate reduction in NO and N_2O atmospheres, 21
Nitrogen
crop utilization of ^{15}N-urea under zero tillage, 563
N-cycle changes due to temperature regimes and trash, 1
N-P effects on winter survival of winter wheat, 293
quantifying net nitrogen mineralization, 333
Nitrogen fixation
adhesive agents and N_2 fixation, 631
Agrispon and plant growth, 621
Nitrogen loss
nitrous oxide emissions from soils during thawing, 187
Nitrous oxide
dissimilatory nitrate reduction in NO and N_2O atmospheres, 21
nitrous oxide emissions from soils during thawing, 187
Non-carbonated
soil temperature and phosphorus extractability, 255
Non-point sources
land disposal of manure in Quebec, 75
Nutrient uptake
availability of subsoil sulphates, 301

Opaline silicia
authigenesis and solodization, 515
Optimum leaf concentrations
nutrient requirements of filberts, 115
Organic acid
citric acid peturbation of Al interlaying, 411
Organic carbon
topsoil loss effect on crop production potential of soil, 533
Organic matter
soil acidity, properties and lime requirement, 545
Organic soil
morphometric system for describing organic soils, 495
organic soil subsidence and swelling, 273

Paleosol
age of Holocene soils, 163
Particle size
release of K in relation to the mineralogy of soils, 107
Particle size fractions
effect of tillage practices on ^{15}N abundance, 345
pH changes during growing season
effect of fertilizer on soil pH, 705
pH versus depth, 705
Phosphate d'ammonium
fertilisation P de la pomme de terre, 369
Phosphorus
influence of subsoil acidity on crop growth, 681
N-P effects on winter survival of winter wheat, 293
Physical disturbance
tree-throw soils from Nova Scotia, 195
Physical land evaluation
integral land evaluation, 467
Placed and broadcast N application
crop utilization of ^{15}N-urea under zero tillage, 563
Plant growth regulators
plant growth activity of Humic complexes, 225
Plant uptake
soil temperature and phosphorus extractability, 241, 255
Podzolic B horizon
field test for Podzolic B horizons, 657
Podzolic soil formation near Hudson Bay, 31
Polyphenolic carbon
limitations of Ch/Cf ratios, 173
Pomme de terre
fertilisation P de la pomme de terre, 369
Pore volume
Tempe cells for soil-water studies, 265
Potassium
HNO_3 and NaTPB-extractable K in some Quebec soils, 99
release of potassium in relation to the mineralogy of soils, 107
soil potassium and its uptake by grapes, 87
Potentially mineralizable N
soil biological changes in crop rotations, 335
Production targets
integral land evaluation, 467
Pseudogleysols
soil drainage groups, 383

Q_{10}
quantifying net nitrogen mineralization, 333

Rapeseed
availability of subsoil sulphates, 301
Reactifs d'extraction (Fe, Al)
Goethite peptisee par pyrophosphate et tetraborate, 505
Redox potential
classification of sandy Chernozemic and Gleysolic soils, 587
Resource constraints
integral land evaluation, 467
Respiration
soil biological changes in crop rotations, 355
Rhizobium japonicum
adhesive agents and N_2 fixation, 631
Rotation (long-term)
monosaccharides in water-stable aggregates, 647

^{35}S availability of subsoil sulphates, 301
Salinity
salinity and crop yield under effluent irrigation, 323
Saprolite
sub-till saprolite in southern Quebec, 577
Saskatchewan soil water reserves, 667
Saturated paste
estimating salinity in Saskatchewan soils, 699
Silica
aluminum in forest soil organic horizons, 637
Smectite
authigenesis and solodization, 515
citric acid peturbation of Al interlaying, 411
SMP buffer
soil acidity, properties and lime requirement, 545
Soil
soil water content by TDR, 313
Soil acidity
effect of fertilizer on soil pH, 705
Soil age
age of Holocene soils, 163
Soil arsenic
effect of heat on soil As levels, 395
Soil erodibility
soil biological changes in crop rotations, 355
Soil erosion
classification of Podzolic soils, 229
Soil (frozen)
nitrous oxide emissions from soils during thawing, 187
Soil interpretations
costs of underground service installations, 463
Soil mesofauna studies under different vegetative regimes, 209
Soil microstructure
soil mesofauna studies under different vegetative regimes, 209
Soil mineralogy
release of K in relation to the mineralogy of soils, 107
soil potassium and its uptake by grapes, 87
Soil moisture
crop utilization of ^{15}N-urea under zero tillage, 563
Soil (organic) subsidence and swelling, 273
Soil pH
pH effects on cation exchange properties of soil, 139
Soil phosphorus
soil temperature and phosphorus extractability, 241, 255
Soil physical characteristics
soil drainage groups, 383
Soil reaction
diclofop-methyl persistence in soils, 283
Soil residue
diclofop-methyl persistence in soils, 283
Soil salinity
estimating salinity in Saskatchewan soils, 699
salinity and crop yield under effluent irrigation, 323
Soil survey
liquid limit determination, 297
Soil temperature
classification of sandy Chernozemic and Gleysolic soils, 587, 605
Soil transect
classification of Podzolic soils, 229
Soil water
soil water reserves in Saskatchewan, 667
tempe cells for soil-water studies, 265
Solodization
authigenesis and solodization, 515
Solonetzic soil
age of Holocene soils, 163
Soluble humic complexes
plant growth activity of humic complexes, 225
Solution pH
pH effects on cation exchange properties of soil, 139
Source d'engrais phosphate
fertilisation P de la pomme de terre, 369
Spatial variability
field measurement of denitrification, 555
Specific adsorption
dispersion of kaolinite by organic matter, 445

Specific adsorption
dispersion of kaolinite by ash, 439
Spodic horizon
field test for Podzolic B horizons, 657
Spruce-fir forest
lateral forest floor variability, 423
Straw decomposition
decomposition of wheat straw, 9
Straw placement
decomposition of wheat straw, 9
Structural perturbation
citric acid perturbation of Al interlaying, 411
Subsidence
organic soil subsidence and swelling, 273
Subsoil acidity
influence of subsoil acidity on crop growth, 681
Sulfur sources
sulfur nutrition of crops, 403
Sulphates
availability of subsoil sulphates, 301
Sulphur fertilizer
availability of subsoil sulphates, 301
Summerfallow and leaching
nitrate leaching and crop rotations, 61
Superphosphate
fertilisation P de la pomme de terre, 369
Surface water gleysols
soil drainage groups, 383
Suspension and extract
estimating salinity in Saskatchewan soils, 699
Swelling
organic soil subsidence and swelling, 273
Swelling clay soils
nature of smectites, 481
Systematic sampling
lateral forest floor variability, 423

Tempe cell
tempe cells for soil-water studies, 265
Temperature
decomposition of wheat straw, 9
influence of subsoil acidity on crop growth, 681
N-cycle changes due to temperature regimes and trash, 1
soil temperature and phosphorus extractability, 241, 255
Temperature effects
phosphorus under crop rotations, 125
Terrace formation
age of Holocene soils, 163
Tertiary alteration
sub-till saprolite in southern Quebec, 577
Time domain relectometry
soil water content by TDR, 313
Tissue boron
effect of boron on cabbage and beans, 571
Tissue S
sulfur nutrition of crops, 403
Topsoil loss
topsoil loss effect on crop production potential of soil, 533
Total N
effect of tillage practices on ^{15}N abundance, 345
Trace elements
effect of heat on soil As levels, 395

Urea hydrolysis
urease inhibition and energy barriers of soil urease activity, 51
Urease inhibitors
urease inhibition and energy barriers of soil urease activity, 51

Vermiculite
Podzolic soil formation near Hudson Bay, 31
Versatile soil moisture budget
soil water reserves in Saskatchewan, 667
Volumetric water content
soil water content by TDR, 313

Wastewater irrigation
salinity and crop yield under effluent irrigation, 323
Water pollution
land disposal of manure in Quebec, 75
Water-stable aggregates
monosaccharides in water-stable aggregates, 647
Water storage capacity
topsoil loss effect on crop production potential of soil, 533
Water table
classification of sandy Chernozemic and Gleysolic soils, 587, 605
organic soil subsidence and swelling, 273
Wheat
Agrispon and plant growth, 621
soil temperature and phosphorus extractability, 241, 255
Wheat (winter)
N-P effects on winter survival of winter wheat, 293
Wheat-fallow rotation
soil water reserves in Saskatchewan, 667

Winter survival
N-P effects on winter survival of winter wheat, 293

Yields
effect of boron on cabbage and beans, 571
sulfur nutrition of crops, 403

Zero-tillage
crop utilization of ^{15}N-urea under zero tillage, 563
effect of tillage practices on ^{15}N abundance, 345
N-cycle changes due to temperature regimes and trash, 1
N-P effects on winter survival of winter wheat, 293